

IN THE CLAIMS

Please amend the claims as follows:

24. (New) A rotary bell cup capable of atomizing particulate material for use in a paint application zone, comprising:

a substantially continuous conical overflow surface providing laminar flow for particulate material delivered through a central axial opening and an annular spray edge surrounding said overflow surface;

a deflector having a deflection surface of generally rotational symmetry disposed in front of said central axial opening and overlapping said conical overflow surface in a spaced relationship; and

wherein said deflector includes a diameter substantially less than a diameter of said overflow surface thereby atomizing particulate paint droplets having a size deviation of less than about 50 microns enabling said rotary bell cup to apply a first coat and a second coat of particulate paint in the paint application zone.

25. (New) A rotary bell cup as set forth in claim 24, wherein said diameter of said deflection surface is less than forty percent of said diameter of said conical overflow surface.

26. (New) A rotary bell cup as set forth in claim 24, wherein said conical overflow surface of said bell cup includes a smooth substantially continuous cone angle providing laminar flow of said particulate paint.

27. (New) A rotary bell cup as set forth in claim 24, wherein said cone angle is between generally 26 and 30 degrees.

28. (New) A rotary bell cup as set forth in claim 24, wherein said annular spray edge includes a diameter of between 63 and 75mm.

29. (New) A rotary bell cup for atomizing paint in a paint application zone, comprising:

a generally conical overflow surface having a generally constant flow angle defining a radially inward central axial opening and a radially outward atomizing rim;

a central flat portion disposed between said conical overflow surface and said radially inward central axial opening;

a deflector having a deflection surface of generally rotational symmetry disposed in front of said central opening having plurality of passageways disposed therethrough opposite said central opening, wherein said rotary bell cup is adapted to apply either a first or a second layer of paint in said paint application zone.

30. (New) A rotary bell cup as set forth in claim 29, wherein said rotary bell cup atomizes particulate paint into droplets having a size deviation of less than about 50 microns.

31. (New) A rotary bell cup as set forth in claim 29, wherein said substantially continuous conical overflow surface includes a flow angle of between generally 26 and 30 degrees.

32. (New) A rotary bell cup as set forth in claim 29, wherein said rotary bell cup atomizes particulate paint into droplets having 80 percent within an 8 to 50 micron deviation.

33. (New) A rotary bell cup as set forth in claim 29, wherein said annular rim includes a diameter of between 63 and 75mm.